



SEQUENCE LISTING

<110> Société des Produits Nestlé S.A.

<120> The Lactose operon of Lactobacillus delbrueckii and its use for controlling gene transcription and/or expression in bacterial cells

<130> 112843-039

<140> PCT/EP00/05834

<141> 2000-06-23

<150> 99112471.0

<151> 1999-06-30

<160> 34

<170> PatentIn version 3.2

<210> 1

<211> 1435

<212> DNA

<213> Lactobacillus delbrueckii

<400> 1

gaattttgtc	tggatgctca	ggaagcccg	cagctcaagc	tggtgattca	gccacttttt	60
actgaataat	gctacaattg	acttaacagc	ataaaatttt	agtaaaagcg	agtgaagaag	120
atggcaacga	tcagagaagt	ggccaaggca	gccggcgtgt	cgccagcgac	ggtttcccg	180
gtcttgaact	atgaccagac	cctgtcgttc	aatgaggcaa	cgccgcagaa	gatattcaaa	240
actgctgaag	ccatgcacta	ccataagagc	cggaagacca	gaaagagcaa	gcaaaagcgc	300
ctggcgatct	gcctgtggtg	tgaccaagac	caggagatca	aggacctcta	ttactattca	360
atcagaacca	gcgcgcaagc	agaggccaag	aagcagggac	ttgaaagcca	ggtcatttat	420
ccggctgatc	ctttgcccga	tccagctgct	ttaagcggga	ttatcatgat	tggctaccag	480
cagtattcgc	cagaccgctt	gaatgaagtc	aaaaagtctg	gcctgcccct	ggtctttgtc	540
gatactgaca	ccttaaaatt	gggttactgc	tcagttgtgg	ctgactttgg	ccaggccatg	600
caggaggcgc	tagaggtctt	ctgggggcag	ggcagggagc	ggatcgccct	tttgatggt	660
gatttgga	gtaattttga	taaaaaac	ttggtcgact	tccgcttccg	cgattataag	720
aagagcctcg	cgccccgcg	ccagtacgac	ccggacttag	tctatgttgg	aaacttcact	780
ccgcaatctg	gctatgaagc	cattaaagaa	gctcttaagt	ccggctcctt	cccgaagcc	840
ttgattgcg	ctaatagacg	catggctatt	ggagcattga	aggcctttaa	agaagctgga	900
attaaagtcc	cagaggacgt	cagtctgatt	tcttttaatt	acacaacggc	agcagaattt	960
gccaaaccag	ccttgactag	cgtacatgta	gagaccagc	agatgggccc	agccagcgtc	1020
aaggtcatga	aagacctgct	ggatgatgat	gaagccggca	cttacaaggt	cactttccca	1080
acaaaactcg	tttaccggga	atcttgccca	aaagcataag	ggcatagagc	ataataacag	1140
caaagaaata	gcttgagat	tgattttctc	caagctat	ttcgtatata	ttatggctgc	1200
attctgttga	tcattcttgg	gaatgggaca	gcttcacgaa	cggtgtccag	cttgacagtc	1260
caggcaatga	cccgttcaaa	gcccattccc	aagccggagt	gcggcacgtg	ccgtactttt	1320
ctcaggggtcc	caggtaccca	ggagtagtcg	tcccagggtt	gaggcccgct	tcttcgattt	1380
gcgccttcaa	ggtgtcgtag	tcagcttcac	gttctgatcc	gccatgattt	cccgt	1435

<210> 2
<211> 332
<212> PRT
<213> Lactobacillus delbrueckii

<400> 2

Met Ala Thr Ile Arg Glu Val Ala Lys Ala Ala Gly Val Ser Pro Ala
1 5 10 15

Thr Val Ser Arg Val Leu Asn Tyr Asp Gln Thr Leu Ser Val Asn Glu
20 25 30

Ala Thr Arg Gln Lys Ile Phe Lys Thr Ala Glu Ala Met His Tyr His
35 40 45

Lys Ser Arg Lys Thr Arg Lys Ser Lys Gln Lys Arg Leu Ala Ile Cys
50 55 60

Leu Trp Cys Asp Gln Asp Gln Glu Ile Lys Asp Leu Tyr Tyr Tyr Ser
65 70 75 80

Ile Arg Thr Ser Ala Gln Ala Glu Ala Lys Lys Gln Gly Leu Glu Ser
85 90 95

Gln Val Ile Tyr Pro Ala Asp Pro Leu Pro Asp Pro Ala Ala Leu Ser
100 105 110

Gly Ile Ile Met Ile Gly Tyr Gln Gln Tyr Ser Pro Asp Asp Leu Asn
115 120 125

Glu Val Lys Lys Ser Gly Leu Pro Leu Val Phe Val Asp Thr Asp Thr
130 135 140

Leu Lys Leu Gly Tyr Cys Ser Val Val Ala Asp Phe Gly Gln Ala Met
145 150 155 160

Gln Glu Ala Leu Glu Val Phe Trp Gly Gln Gly Arg Glu Arg Ile Ala
165 170 175

Leu Leu Asp Gly Asp Leu Asp Ser Asn Phe Asp Lys Asn Asn Leu Val
180 185 190

Asp Phe Arg Phe Arg Asp Tyr Lys Lys Ser Leu Ala Ala Arg Gly Gln
195 200 205

Tyr Asp Pro Asp Leu Val Tyr Val Gly Asn Phe Thr Pro Gln Ser Gly
 210 215 220

Tyr Glu Ala Ile Lys Glu Ala Leu Lys Ser Gly Ser Phe Pro Lys Ala
 225 230 235 240

Leu Ile Ala Ala Asn Asp Ala Met Ala Ile Gly Ala Leu Lys Ala Phe
 245 250 255

Lys Glu Ala Gly Ile Lys Val Pro Glu Asp Val Ser Leu Ile Ser Phe
 260 265 270

Asn Asp Thr Thr Ala Ala Glu Phe Ala Asn Pro Ala Leu Thr Ser Val
 275 280 285

His Val Glu Thr Gln Gln Met Gly Arg Ala Ser Val Lys Val Met Lys
 290 295 300

Asp Leu Leu Asp Asp Asp Glu Ala Gly Thr Tyr Lys Val Thr Phe Pro
 305 310 315 320

Thr Lys Leu Val Tyr Arg Glu Ser Cys Pro Lys Ala
 325 330

<210> 3
 <211> 6
 <212> DNA
 <213> Lactobacillus delbrueckii

<400> 3
 tgttta

6

<210> 4
 <211> 7
 <212> DNA
 <213> Lactobacillus delbrueckii

<400> 4
 gtaaaca

7

<210> 5
 <211> 7
 <212> DNA
 <213> Lactobacillus delbrueckii

<400> 5
 gtaaacg

7

<210> 6	
<211> 17	
<212> DNA	
<213> Lactobacillus delbrueckii	
<400> 6	
cgcctggtga ttcagcc	17
<210> 7	
<211> 20	
<212> DNA	
<213> Lactobacillus delbrueckii	
<400> 7	
agctttacgg ggaagtcggg	20
<210> 8	
<211> 15	
<212> DNA	
<213> Lactobacillus delbrueckii	
<400> 8	
tgtaagcgta aacaa	15
<210> 9	
<211> 98	
<212> DNA	
<213> Lactobacillus delbrueckii	
<400> 9	
tgtttactaa aaatattttg gtaaagcatc ttgatttggt tagtaaacgg gtctatactg	60
taagcgtaaa caagttagaa cacctaaagg agaaaatc	98
<210> 10	
<211> 25	
<212> DNA	
<213> Lactobacillus delbrueckii	
<400> 10	
atattactgc agagtaaaag cgagt	25
<210> 11	
<211> 25	
<212> DNA	
<213> Lactobacillus delbrueckii	
<400> 11	
ataaataagc ttacagaatg cagcc	25
<210> 12	
<211> 27	
<212> DNA	
<213> Lactobacillus delbrueckii	

<400> 12
 atattagaat tcagtgactt aaactgg 27

<210> 13
 <211> 27
 <212> DNA
 <213> Lactobacillus delbrueckii

<400> 13
 atattagaat tcagtacttt gacaccg 27

<210> 14
 <211> 27
 <212> DNA
 <213> Lactobacillus delbrueckii

<400> 14
 atattagaat tcaagaggct atatcgc 27

<210> 15
 <211> 18
 <212> DNA
 <213> Lactobacillus delbrueckii

<400> 15
 ggttaatgcc gccaaagt 18

<210> 16
 <211> 25
 <212> DNA
 <213> Lactobacillus delbrueckii

<400> 16
 ataaatctgc agtgggtatg gtggc 25

<210> 17
 <211> 22
 <212> DNA
 <213> Lactobacillus delbrueckii

<400> 17
 gatcgttgcc acattcacca cc 22

<210> 18
 <211> 21
 <212> DNA
 <213> Lactobacillus delbrueckii

<400> 18
 ggtgaatgtg gcaacgatca g 21

<210> 19

<211> 25
 <212> DNA
 <213> Lactobacillus delbrueckii

 <400> 19
 atattactgc agacagaatg cagcc 25

 <210> 20
 <211> 25
 <212> DNA
 <213> Lactobacillus delbrueckii

 <400> 20
 ataaatctcg agtggtgatt cagcc 25

 <210> 21
 <211> 25
 <212> DNA
 <213> Lactobacillus delbrueckii

 <400> 21
 atattactcg agacagaatg cagcc 25

 <210> 22
 <211> 98
 <212> DNA
 <213> Lactobacillus delbrueckii

 <400> 22
 tgttttactaa aaatattttg gtaaagcatc ttgatttggt tagtaaacgg gtctatactg 60
 taagcgtaaa caagtttagaa cacctaaagg agaaaatc 98

 <210> 23
 <211> 28
 <212> DNA
 <213> Lactobacillus delbrueckii

 <400> 23
 tgttttactaa aaatattttg gtaaagca 28

 <210> 24
 <211> 28
 <212> DNA
 <213> Lactobacillus delbrueckii

 <400> 24
 tgttttactaa aagtattttg gtaaaaca 28

 <210> 25
 <211> 28
 <212> DNA
 <213> Lactobacillus delbrueckii

 <400> 25

tggcgactaa aagtattttg gtaaaaca 28

<210> 26
<211> 28
<212> DNA
<213> Lactobacillus delbrueckii

<400> 26
aaattactaa aaatatttta gtaaaaca 28

<210> 27
<211> 29
<212> DNA
<213> Lactobacillus delbrueckii

<400> 27
tcttgatttg tttagtaaag gggctctata 29

<210> 28
<211> 29
<212> DNA
<213> Lactobacillus delbrueckii

<400> 28
tcttgatttg tttagtaaag aagctctata 29

<210> 29
<211> 29
<212> DNA
<213> Lactobacillus delbrueckii

<400> 29
tcttgatttg tttagtaaag aagctctata 29

<210> 30
<211> 29
<212> DNA
<213> Lactobacillus delbrueckii

<400> 30
tcttgatttg tttagtaaag aagctctata 29

<210> 31
<211> 107
<212> DNA
<213> Lactobacillus delbrueckii

<400> 31
tttttgattt ctaaaaatat tttagtaaag catcttgatt tgttagtaa acgggtctat 60
actgtaagcg taaacaagtt agaacaccta aaggagaaaa tcatgaa 107

<210> 32

<211> 107
<212> DNA
<213> Lactobacillus delbrueckii

<400> 32
aaaaacaaat gattttttata aaaccatttc gtagaactaa acaaatcatt tgcccagata 60
tgacattcgc atttggtcaa tcttggtgat ttcctctttt agtactt 107

<210> 33
<211> 106
<212> DNA
<213> Lactobacillus delbrueckii

<400> 33
tttaaattac taaaaatatt ttagtaaaac atcttggttt atttagtaaa caagtctata 60
ctgtaattat aaacaagtta acacacctaa aggagaattt catgaa 106

<210> 34
<211> 106
<212> DNA
<213> Lactobacillus delbrueckii

<400> 34
aaatttaatg atttttataa aatcattttg tagaaccaaa taaatcattt gttcagatat 60
gacattaata tttgttcaat tgtgtggatt tcctcttaaa gtactt 106